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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,267	08/14/2001	Hans-Wulf Pfeiffer	03466-P0001B	9985

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EXAMINER

DERRINGTON, JAMES H

ART UNIT	PAPER NUMBER
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1731

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DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/929,267

Applicant(s)

PFEIFFER, HANS-WULF

Examiner

James Derrington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2002 and 04 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brookes et al (5,128,083), Thomas et al (3,573,023) or the Abstract of JP04108675 in view of Rice et al (5,228,245).

Brookes et al (5,128,083) disclose the treatment of ceramic articles by subjecting the surface to plastic deformation (Col. 1, lines 35-38) whereby physical properties are improved (Col. 1, line 60 ff). Brookes et al (5,128,083) disclose engineering ceramics at Col. 1, lines 6-9 and indicate that the workpiece and the treating tool can be the same engineering ceramic material (Col. 2, lines 44-59). The shapes of the treating materials disclosed at Col. 1, lines 43-46 would suggest the use of a hammer or roller or nail to one of ordinary skill in the art as recited in claims 7-9 and 16-18.

Thomas et al (3,573,023) disclose the process of shot peening brittle (Col. 1, line 42) ceramic articles whereby the surface receives compressive stresses and the strength of the article is improved (See Col. 1, lines 40-48 and Col. 2, lines 1-71).

The Abstract of JP04108675 discloses a process of shot peening, barrel polishing or honing the surface of a ceramic article (points of maximum stress or the whole surface) whereby improved strength and crack resistance is obtained.

JP04108675 discloses that shot peening can be applied to the whole surface or points to be subjected to max. stress and this teaching would clearly suggest contacting the

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workpiece within a predetermined area that is less than the total surface area of the workpiece.

The instant process includes increasing the strength of brittle hard materials, i.e. ceramics, and clearly is inclusive of shot-peening ceramics (See instant specification, paragraphs 30 and 33). Thomas et al disclose the process of shot peening (Col. 2, line 43) brittle ceramic articles (Col. 1, lines 40-48) whereby the surface receives compressive stresses and the strength of the article is improved Col. 2, lines 69-71). The instant claims additionally recite the size of the tool that applies the compressive force. Rice et al (5,228,245) disclose a related process of strengthening ceramic materials where the size of the shot or blasting media can preferably be 600 microns, i.e. .6 mm. (Col. 2, lines 55-58). It would have been obvious to have used the claimed tool size since this size would be expected to perform in the art expected manner in view of the teachings of Rice et al.

Thomas et al teach both a room temperature and an elevated temperature embodiment (See Col. 3, lines 57-64 and compare claims 1 and 3 of Thomas et al. This reference clearly discloses the process conducted at room temperature.

Applicant's responses have been reviewed; however, they are not persuasive for the following reasons. First, and with regard to Brookes et al (5,128,083), the reference teaches that the process is "preferably ... at a sufficiently high temperature ..." (See Col. 1, lines 47-50, emphasis added). Conveniently, this process is conducted at a "temperature less than 0.5 Tm" (Col. 1, lines 52-53, emphasis added). Further, Brookes et al recite elevated temperature at Col. 6, lines 12-14 but not Col. 4, lines 44-58). A

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reference must be considered for all of its teachings and not just preferred embodiments. In view of this disclosure of Brookes et al it is clearly reasonable to conclude that Brookes et al disclose not only elevated temperatures but temperatures of the normal working environment including room temperature.

The examiner also does not agree with applicant's analysis of Thomas et al (3,573,023). Thomas et al teach both a room temperature and an elevated temperature embodiment (See Col. 3, lines 57-64). The reference includes magnesium oxide (a ceramic material) in a process which does not require an elevated temperature (See Col. 4, lines 20-29). Additionally, the examiner does not agree that tungsten carbide as discussed in the normal room temperature environment is not a ceramic (note Col. 3, lines 61-63). Tungsten carbide would be considered a cermet when this ceramic material is combined with a cementing additive such as cobalt.

Applicant's response to the teachings of the Abstract of JP 04108675 is not convincing. It does not appear that applicant has addressed the most relevant teaching of this reference where shot peening the surface of a ceramic article (points of maximum stress or the whole surface) whereby improved strength and crack resistance is obtained. The energy beam treatment is an additional step and is not excluded by the instant claims. In addition, applicant appears to be referring to teachings such "the member 12 and a member 13 of steel, etc., are heated in vacuum with Cu as a buffer 14 and brazed together" that do not appear in the copy of the Abstract of the PTO file. The examiner has requested a completed translation of JP 04108675 and a copy will be faxed to applicant upon its receipt.

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Applicant's response to the teachings of Rice et al (5,228,245) is not persuasive. This reference has not been applied alone against the claims but in combination with the other references. A related process of strengthening ceramic materials where the size of the shot or blasting media can preferably be 600 microns, i.e. .6 mm. (Col. 2, lines 55-58) is shown by this reference. It would have been obvious to have used the claimed tool size since this size would be expected to perform in the art expected manner in view of the teachings of Rice et al. Zirconia is not required as argued by applicant. Attention is directed to Col. 1, lines 7-20 and Col. 3, line 20 ff).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

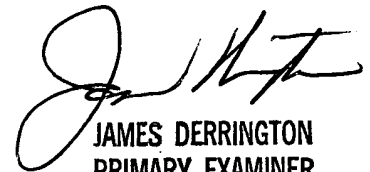
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Derrington whose telephone number is 703 308-3832. The examiner can normally be reached on 8:30am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7718 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.


JAMES DERRINGTON
PRIMARY EXAMINER
ART UNIT ~~137~~/1731

jd
May 19, 2003